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EDUCATIONAL NEWS AND EDITORIAL COMMENT

The Indiana Commission on Vocational Education

The last legislature of the state of Indiana appointed a commission to investigate the general problem of industrial and agricultural courses throughout the state. This commission was also empowered to develop a plan for future promotion of this sort of work in the schools of the state. The commission is prepared now to make its report and has given a preliminary statement of its work before educational meetings. It finds, as every other commission of this type has found, that there is grave need in all of the communities of the state for industrial and vocational training. It finds also that very little of this work has been done in the state, and that the courses which have been undertaken have been carried forward very unsystematically. The commission deplores the lack of attention to this work. One point in particular may be brought out, since the report is offered to the people of the state as a whole. Attention is drawn to the fact that the communities are not at all alive to the importance of such training. Most of these communities believe in the traditional school, and, since they do not recognize the urgency of the problem, are unprepared for the recommendations to be made by the commission.

After reviewing the whole situation and referring to the practices in other states and countries, the commission recommends first that school authorities in cities, towns, and townships be given power to establish and maintain vocational schools in departments including trade classes and agricultural classes as their local situation may warrant, and to levy a tax in support of the same. The

commission further recommends that state aid in amounts equal to two-thirds of the sum expended by the local authorities in instruction in vocational and technical subjects be supplied, in order that the work of the schools may be carried on more efficiently.

The further recommendations of the commission work out in detail this general plan. A number of co-operative agencies are provided through state universities and through state departments for the supervision and promotion of this type of training.

It is to be noted that the report of this commission, which undoubtedly will have much influence in formulating the policy not only in the state of Indiana but in neighboring states as well, is distinctly in favor of a reorganization of the elementary school rather than the development of a parallel school system. In this particular the report of the commission departs radically from the plan which is being developed in the state of Massachusetts and imitates the New York state plan.

From the point of view of the present writer, this report of the Indiana commission is in keeping with the best policies that can be advocated for all of the middle western states.

National Society for the Scientific Study of Education

"Supervision of City and Rural Schools" is the topic to be discussed in 1913 Yearbooks of the National Society for the Study of Education. This continues the policy which has prevailed in recent years of discussing, in a concrete practical way, certain fundamental aspects of the administration of city and rural schools. The Yearbook on *City School Supervision* is being prepared primarily by Dr. J. F. Bobbitt of the Department of Education of the University of Chicago. A supplementary discussion is to be provided by Professor John Hall of the University of Cincinnati. A unified, scholarly, practical outline discussion of the problems and attempted solutions in this line is greatly needed.

The Yearbook which deals with *Rural School Supervision* was planned by Mr. A. C. Monahan, specialist in agricultural education of the National Bureau of Education. It will contain a general introduction by Mr. Monahan and special articles dealing with typical schemes of rural supervision such as the "District Plans

of West Virginia and Oregon"; "New England Townships and Union Districts"; "State Supervisors of Rural Elementary Schools in the South"; "County Supervision in Illinois, in Baltimore County, Md., and in Berks County, Pa."; "Supervision of Rural Schools for Negroes." The contributors include L. J. Hanifan, state supervisor of West Virginia, J. E. Warren, state inspector in Massachusetts, Wallace Lund and Wicliffe Rose, of the Southern Education Board, State Superintendent Blair of Illinois, A. S. Cook of Baltimore County, Md., E. M. Rapp of Berks County, Pa., and Jackson Davis, state supervisor for Virginia. A bibliography is provided through the courtesy of Mr. J. D. Wolcott of the Library of the Bureau of Education.

The Yearbooks go to press soon and will be distributed about February 1. They will be discussed at the annual meeting in Philadelphia on Monday evening, February 24.

Books and Art, Collected and Distributed by the Bureau of Education

The Bureau of Education asks that attention be called to the fact that two types of donations are needed to complete the library collection of the bureau. First, the bureau is anxious to secure all sorts of current educational material. Reports from educational associations, boards, and societies of state, county, and city departments of education are urgently needed if the record of school systems and educational activities is to be complete. Second, the bureau requests that all sorts of textbooks be sent to the library. If anyone has a textbook fifty years old, or one hundred years old, this material will be very valuable in helping to fill out the history of American education. Indeed, we are coming to recognize in general that the history of education needs to be rewritten in terms of such concrete material as the bureau is now attempting to collect. The typical history of education contains reviews of the statements of those who had written their ideas about what ought to be done in the schools. Future histories of education are going to contain more and more information about what was in the actual textbooks employed, what the classroom exercises consisted in, how the children were graded in the different schools. These concrete matters about actual school practice are by no means

as easy to get together as the remarks of educational writers, and yet it is perfectly clear that within the next generation, students of the history of education will learn to recognize the importance of this type of material which the bureau is now bringing together, as contrasted with the somewhat vague and nebulous opinions for the most part offered to students of educational institutions.

The bureau also makes an announcement which is of very large interest, because it calls attention to the possibility of developing the loan collection plan. The art museum of the city of Boston made it possible some years ago for towns throughout Massachusetts to receive material of this sort. The development of a national method of loaning art material is a very welcome addition to school equipment.

It will soon be possible for any city school to have a drawing exhibit of national significance practically without cost. Dr. Henry Turner Bailey and Mr. Royal B. Farnum are preparing for the United States Bureau of Education an exhibit of the best examples of drawing and art work in the elementary, high, and normal schools of the United States, as well as one or two of the art schools. The exhibit is to be sent to any city desiring it upon payment of the cost of transportation from the city last using it. The transportation charges will be small.

The exhibit is not to be a large one, but it is being selected with unusual care, so as to show the work that will be most suggestive to teachers, children, and school officers. It will be ready for shipment about January 1, but cities desiring it should make application at once to the Commissioner of Education, Washington, D.C., in order that it may be dispatched to as many localities as possible with the least expense to each of them.

Shall the School Day Be Shortened?

In recent addresses before state associations, the Commissioner of Education of the United States has advocated the reduction of the school day. The formula which he has employed is somewhat as follows: It would be very well for us to have three, or perhaps even two hours of schooling in the morning, this to be continued during a long period, indeed during the whole life of any citizen. The remainder of the day should be spent in useful occupation of some sort or other.

Such a statement as this sounds very reactionary in contrast with the plea which is frequently being heard in all parts of the country for a larger school opportunity. It is not unusual to hear a fuller school day advocated because this fuller school day corresponds more exactly to the hours which have been found essential in business. Thus the Boston School of Commerce found it desirable to increase the length of its school day for exactly this reason.

The Commissioner's remarks will undoubtedly be more truly interpreted by referring to some of the details of the plan which he advocates. His plan is advocated primarily with a view to giving children in the lower school some opportunity to find suitable engagements for their powers and interests in farm work, in house work, and in constructive activities. Indeed, the plan was not discussed in detail in its application to city schools but was made most emphatic with reference to rural schools. Furthermore, the Commissioner states explicitly that it is his desire that the school shall supplement and enlarge this opportunity for real labor, that the opportunity for real labor shall furnish the material out of which the school work shall grow. Thus, the advocacy of a shorter school day turns out to be after all the advocacy of a somewhat different program for the child's supervised work. For two hours in the morning, or three, he shall devote himself to the studies which give him the scientific principles on which his work is based during the rest of the day when he is not in school. During the remainder of the day he shall go, for purposes of employment and for purposes of enrichment of experience, into the practical world. Presumably if the practical world which surrounds the child does not offer the opportunities for suitable occupation, it will be the business of society to see that the remaining hours of the day are equipped with opportunities for recreation and for work. In other words, if the city child is to be brought into this program advocated by the Commissioner, it will be necessary for some sort of an institutional supervision to be provided for these extra hours. The school probably can do this as well as any other institution, and we shall be led, in keeping with the spirit of the Commissioner's comments, to provide after all for a longer rather than a shorter school day. It is certainly desirable that the educational world, in the discussion of matters of this type, should be

very fully informed as to the actual machinery which is to be set in motion in order to make valid a contention that the school day should be reduced in length. The clamor for an increase in school opportunity is much too loud to be suppressed by the general theoretical statement that we can leave children to collect experiences for themselves, if only these experiences can somehow be coordinated with the work of the school. The serious problem of the school at the present time is to keep the child's time and energy systematically organized and utilized. In order to perfect this extremely difficult program, it will be necessary for us to keep our eyes clearly upon the necessity of some social contribution to the whole organization of the child's energy and time.

Shall Teachers Be Promoted with Their Grades?

Another interesting doctrine which the Commissioner of Education has been advocating in his recent addresses is the doctrine that a teacher should be promoted with her class. It would be very much better, the Commissioner holds, for the fourth-grade teacher to go forward into the fifth grade with the class, carrying along the knowledge of personal peculiarities and achievements of the children, than that the children should be transferred, or, as he picturesquely puts it, "pitched," from one teacher to another.

The experiment which the Commissioner here advocates has been tried from time to time with very great advantages to the children. On the other hand, it is to be pointed out that the teacher who is successful in the primary grades may miss very seriously the problems of the intermediate or upper grades. If our educational psychology has shown us anything with regard to the development of children, it is that that development is periodic in character, involving from time to time very radical changes in interest and in methods of study on the part of the children. The teacher would probably have to readjust quite as radically as the children, and the changes would not be so certain if the teacher went forward with her class. Indeed, it is very frequently true that the change in social environment which comes with the transition from grade to grade is the very best opportunity for arousing in children characteristics which they have not up to this time

exhibited. Parents do not recognize the radical changes in interest and in mental qualifications of children because they deal with them too intimately and continuously. The problem which is suggested by the Commissioner's discussion is an interesting one, and should call for the report of experiences from all quarters where experience has been collected, but that a radical change should be made in our public-school system so as to carry the teachers forward is not immediately obvious without more evidence than is now at hand.

Various Types of Teachers' Agencies

Two significant announcements have recently been made with regard to the methods of securing appointments for qualified teachers. Mr. C. A. Prosser, secretary of the National Society for the Promotion of Industrial Education, announces that his office will conduct a registration bureau for those teachers who are prepared to give instruction in industrial subjects. This registration will not include recommendation, and it will not be the business of Mr. Prosser's office to select teachers for given places, although naturally enough the office will sooner or later come to exercise some advisory functions. For the present, however, the bureau is to be conducted in such a way that anyone wishing a teacher of this sort will consult it merely for information rather than for selective advice.

An announcement made by the department of education of Massachusetts states that, by act of the legislature in 1911, the state board of education is required to establish a teachers' bureau. The object of the bureau is to assist superintendents in finding the right teachers, and teachers in finding the right places. Plans for developing this work are now under way, and a comprehensive system of registering and classifying is being worked out. By law a registration fee of two dollars is charged to the applicant. There is no other fee. In addition to the information obtained by the customary registration blank, it is intended to accumulate first-hand information concerning teachers and their work by members of the staff. All the information obtainable will be placed at the disposal of the inquiring superintendent. Teachers will not be notified of vacancies for which they are expected to apply, unless the bureau is requested to notify them.

In this connection it is interesting to note that practically every college and university in the country is now conducting a free registration bureau through which superintendents become acquainted with the graduates who are qualified to fill high-school positions and even positions in the elementary schools. Every normal school is also a center for distribution of information about available candidates. In addition to these public institutions there are a large group of teachers' agencies engaged in the business of finding places for teachers and finding teachers for superintendents who wish to fill vacancies. The fact that certain of the educational institutions of the country and certain organized societies are beginning to deal with this matter is undoubtedly significant for the future. There is no reason why state teachers' associations, and sectional associations should not become very helpful agencies in the distribution of information. Indeed, there are many teachers who have experienced through teachers' agencies the unfortunate results of overkeen competition and of a purely business attitude toward the question of placing teachers. Very frequently the teachers' agency renders very slight service and collects an unduly large proportion of the subsequent salary. In other cases the teachers' agency undoubtedly does render a service which justifies its commission. The co-operative method of dealing with the problem would be more economical for teachers than the present business methods employed by teachers' agencies. Mr. Prosser's bureau and the registration system which is required in Massachusetts are suggestive examples which ought to be followed by other institutions of like type.

School Banks in Canada

The Consular and Trade Report gives an interesting account of the growth of the Canadian penny bank system in the public schools. The organization of school penny banks in the Dominion of Canada is regulated by an act of Parliament. A large number of these banks have been established throughout the various provinces. During the fiscal year ending June 30, 1911, deposits increased from $142,000 to $175,000. The depositors received 3 per cent interest, and it is understood that the government pays to the banks $3\frac{1}{2}$ per cent on

these special deposits. Certain banks in each town offer their services in handling these accounts, in which there is no profit, in the hope that the children, depositing in these school banks, may eventually become depositors in a larger way. Deposits are made each morning by the students with the teacher, and an employee of the bank goes to the school to receive the money so collected. Each depositor has a passbook in which deposits are entered by the teacher. The withdrawals are entered by the bank. The books are supplied by the school board, and paid for out of school funds.

The Panama-Pacific Exposition

The preliminary announcements of the Panama-Pacific International Exposition to be held in San Francisco in 1915 make emphatic reference to the educational features of this exposition. It is planned that there shall be a series of educational conferences. Teachers' associations and conventions are invited to become a part of the general organization of this exposition, and there will undoubtedly be an elaborate collection of material from American and foreign schools. The interest of teachers in the general exposition is of course urgently solicited, and the probability that educational meetings will be an important part of the organization is set forth in the preliminary circulars.

Marking Systems

The methods of marking pupils in school are constantly subjected to adverse criticism both by students and by the instructors who have to employ marking systems. How nearly a student has approached to some theoretical maximum is very difficult to determine, and certainly more difficult to express. Again and again it has been pointed out that it would probably be better to subdivide the problem in some way, to call attention to the fact that a certain pupil has initiative, that he prepares his lessons carefully, that he exhibits good powers of memory and concentration, that he knows how to reason. In short, it would be better if the general problem could be so subdivided that the mark finally given to the student would signify something with regard to each of these different traits which his school work is supposed to cultivate and perfect.

The various schemes which have been suggested for this sort of grading are re-examined at most teachers' meetings, and it is with a view to exciting discussions along this line that the note is here inserted. It would be very desirable to hear from those who have tried any of these methods of special rating of school children.

This item is suggested by the fact that Dr. L. C. Wooster, head of the Biological Science Department at the Kansas Normal School, recently proposed the following subdivision of one hundred points.

	Perfect Grade
Power of initiative	24
Power of inductive reasoning	24
Memory of general principles	24
Power of deductive reasoning	20
Memory of words	8
	100

PRINCIPLES OF REVISION OF A COURSE OF STUDY APPLIED TO GEOGRAPHY

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In an attempt to correct an overcrowded curriculum, there are at least three ways in which the problem may be attacked.

I. Elimination of unnecessary subject-matter (A) through careful attention to the aims of the course, and (B) by the presentation of subject-matter in the form of problems, thereby providing for something more than a *mere listing of facts*, and automatically limiting the exploration of relatively unimportant bypaths.

II. Such taking account of relations between various elements of the subject-matter as will provide for right *cumulative effect.* That is to say, wherever possible, the first thing taught should (through grade after grade) lead up to, and reinforce later material. The whole should also be knit together by *review problems* which present new aspects of old material, and serve as drills and reviews of important points.

III. Integration of subjects, in other words cutting down the number of subjects because of recognition of the fact that phases of the same subject have crept into the curriculum under various names, and can be put together so that the same results may be obtained with less skipping from subject to subject.

The following course in "Environment" has been prepared as an attempt to apply these principles. This course is meant to take the place of elementary science, nature-study, school gardening, and geography of the first three grades, and to merge into the geography of the fourth grade (see fourth-grade outline). Geography is regarded as "relation of the earth to life," and the early grades are devoted to the gathering of facts (earth facts and life facts), which are to be related causally in later grades (beginning with real home geography in fourth grade) where the child is more mature. Some spatial relations are dealt with in each grade.

TENTATIVE COURSE OF STUDY IN ENVIRONMENT

TO TAKE THE PLACE OF REGULAR COURSE IN NATURE-STUDY, ELEMENTARY SCIENCE, SCHOOL GARDENING, AND GEOGRAPHY, IN THE STATE NORMAL SCHOOL AT WINONA, MINN.

GRADE I

I. *Natural environment.*

Study trees, because (1) there are plenty within easy reach on our campus, (2) they are large and present easily comprehended gross features, (3) they are stationary and easily observed again and again, and for relatively long periods (N.B.—These considerations overbalance the fact that children's interests are more primarily in moving animal life.)

The problem in regard to trees is one of *recognition and appreciation* only.

In animal life, work for recognition of such common animals as will be likely to be met with in the reading or in the child's own restricted experience. Most of the children will be familiar with many of these, but some will be ignorant of a part of the last, and there should be a general checking up, covering such creatures as cats, dogs, chickens, rabbits, squirrels, foxes, cows and calves, horses and colts, sheep, turtles, ants, grasshoppers, butterflies, crickets, bees, etc.

Children in this grade should begin to learn how to care for a canary and for plants, but should not be given full care and responsibility. Assistance should be permitted and encouraged, attention being drawn to the details of what must be done.

Do gardening in order that the children may see *many things grow*, in order that they may get the concept that things do grow—that they come from seeds planted in the ground and develop through the various stages to maturity. Note all kinds of plant life—vegetables, cereals, flowers, weeds—but for the above-mentioned purpose specifically.

Cultivate a general appreciative observation of the whole environment as opportunity presents itself, but do *specific* work as outlined above.

In none of the work suggested for this grade should scientific analysis be expected. Let the child recognize by picking out the characteristics which appeal to him.

II. *Artificial environment.*

Study three stores: (1) dry goods, (2) meat market, (3) grocery. Find out definitely what is kept in each store. Notice particular things. Learn generalization "store."

Study local *home*. Make this study from the *fact* side.

To aid in future geography work give some attention to the spatial relation of direction and distance. Let the children learn the directions by actual field work (view from top of building or similar device). Do not deal with maps or symbols of other kinds at this point.

GRADE II

I. *Natural environment.*

Recognition and appreciation of local flowers and shrubs.

Review problem: To find and recognize away from the campus the trees we learned to know on the campus last year. Tell how we know them. (Still let the child be largely independent as to the distinguishing features he selects.)

Gardening (spring): Review and clinch main features of fall visit to farm (see below).

Problem: To recognize what the farmer plants, and actually to plant it, and to recognize it when it grows.

Distinction between weeds and valuable garden plants. What animals and insects do we discover are helpful to our gardens, and what are harmful? Recognition of what common animals of the environment are domestic and what are wild.

Appreciation as in Grade I.

II. *Artificial environment.*

Other local stores than those studied in first grade. Recognize and tell what these stores have for the home, and what they get from the farm.

Visit the farm, familiarizing the children with farm conditions, becoming at home on the farm, wearing off strangeness, recognizing fields, animals, housing, fruits, grains, etc.

(Manual-training course should make application of all of this in construction work, etc.)

Transportation: Recognition of modes of getting from farm to town and about town.

Distinction between domestic and wild birds: Care for a bird in the schoolroom.

Continue first-grade work in direction and distance, but in field work only, without relation to maps or diagrams.

GRADE III

I. *Natural environment.*

Recognition and appreciation of birds.

Review problem: What kinds of trees, flowers, and shrubs did we see while looking for birds?

What makes an animal a good domestic animal?

How can our domestic animals take care of themselves, and how can we help to take care of them?

What kinds of flowers and weeds have seeds that are good food for birds?

Do the birds all eat the same kind of seeds? Of insects?

What birds are helpful to our gardens? For what other reasons do we like birds? How can we help them? Kodak-hunting vs. gun-hunting.

Gardening (fall): Harvesting of normal department spring garden. Compare what was seen on the farm with what was seen in the school garden.

Care of house plants (winter) and planting of bulbs: One motive—to have Easter lilies.

II. *Artificial environment.*

Factories of Winona—Problems: What do they make? What raw materials do they use? Where do the raw materials come from? What are the uses of the products? How many of them come into our homes direct from the factory, and how many through the stores?

N.B.—Work with spatial relations of distance and direction should be continued in this grade, but still through actual experience, instead of through the medium of maps or diagrams. The direction of the farm from the school, etc., suggest the character of the available material. Pointing in various directions; walking in various directions; using names north, south, east, and west until they are very familiar in actual practice—all of this should be woven in until it is too familiar to allow the child to become confused.

GRADE IV

Beginning with this grade the course should be definitely called *geography*, but should include the necessary elements of the other subjects, no subject called elementary science, nature-study, or school gardening being put upon the program separately. The first three grades have been collecting *facts*—facts about the *earth*, and facts about *life*. They are in the fourth grade to begin to relate those facts into the science of geography, geography being regarded as the "relation of earth to life." These relations are of course mainly *causal*. The basis for geography is another relation—the spatial. These spatial relations are (as already provided in this course) to be emphasized in each one of the first three grades, and to be summed up and applied to maps and charts in the latter part of the fourth grade now under discussion (see below).

Home geography: 6 months. Use Dodge's *Home Geography* outline as found in his first book, but treat the subjects as treated in McMurry's discussion. (Tarr and McMurry's *Geography*.)

4 B Grade. Do topics 1 to 10 inclusive, omitting topic 4.

4 A Grade. Do remaining topics in Dodge, *Home Geography* outline, and spend three months on *Homes in other Lands*, as an introduction to a first *extensive* view of the "world as a whole," going from *consequence* to *cause*. Make this study of homes by means of a series of type studies, gathering the facts which will tend to build up in the child's mind an idea of the heat belts, so that he has roughly blocked out in his mind the "world as a whole" divided into zones. Use *Seven Little Sisters* and *Each and All*, in so far as they are applicable to this work.

Map study: Map study should come *after* the child has something to map. Hence, as has been intimated in previous grades, it would be left until the study of home geography in the fourth grade has gone far enough to give the child at least an elementary need for symbols of geographic areas. But

the fact that his necessity does appear should be recognized, and along with it the other fact that it takes very careful initiation into the use of the symbol in order to be sure that it does not supplant the real thing, but *only comes to stand for the real thing.*

Spatial relations having been well cared for in the preceding grades, this knowledge can be relied upon as an aid in the understanding of the map idea. Directions on the map should be developed first by plots of ground used to represent larger areas, then by sketches on paper made by laying the paper upon which a sketch is to be made flat on the floor, where the real directions may be observed and marked. Hang on north wall. Afterward, the simple details may be filled in as becomes necessary or desirable. Do not give to the child, at first, maps completed by someone else and ask him to interpret them, but stimulate and encourage him to make maps for himself, summing up his knowledge of home geography relations. Some of the gross theory of drawing to a scale will need to be taught. Teach the child to see the map as a symbol of a reality (which reality at this point is largely within his own experience).

Credit for valuable constructive criticism of this course is due to the critic teachers of the Winona Normal School.

BIBLIOGRAPHIES, BRIEFS, AND ORAL EXPOSITION IN NORMAL SCHOOLS[1]

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I desire to comment on three phases of co-operative training in English which are possible in normal schools, namely, (1) training in the use of books and libraries, that is, systematic bibliographical work, (2) training in the organization of material in the form of expository briefs, and (3) training in oral exposition.

The possibilities of this type of co-operative English work are probably greater in a normal school which emphasizes two-year courses for high-school graduates than in any other educational institution above the elementary school. These large possibilities are due to the fact that such a normal school theoretically should be, and often is, more unified in its organization than other institutions. This greater unification results from several factors which include (1) the very definite professional aim, namely, training teachers for elementary schools, (2) the relatively brief period for doing this. The combination of these factors results in a very rigid selection of those courses of instruction which are essential and the definite elimination of those courses which do not have a large applied value. Hence in a given department, few courses will be offered, and these will soon become definitely standardized. When this standardization is once effected, the attention of the department is no longer concentrated on the selection of its subject-matter, but upon the most effective teaching of the subject to the normal-school students. This effective teaching may very well include the three forms of co-operative English work mentioned above, namely, training in systematic bibliographical work, in writing expository briefs, and in oral exposition, and this work may be required uniformly throughout the institution in all departments.

[1] A paper presented before the National Council of English Teachers, Chicago, November 29, 1912.

These forms of activity are of vital importance in the effective teaching of every subject; they are as important in history, geography, and nature-study as they are in English. In this respect they differ from some of the more formal aspects of English work, such as correct spelling, correct forms of speech, sentence structure, etc., in which the instructor who is not a specialist in English is often not interested and of which he is commonly not competent to judge. I shall take up briefly each of the forms of co-operative work for special consideration.

The necessity of training in systematic bibliographical work is easily demonstrated. Many school buildings are being provided with selected libraries; special library collections for children are provided in many cities; supplementary reading by children is growing in all subjects; and the teacher is expected to be constantly developing a body of supplementary subject-matter and informing herself concerning the larger aspects of the topics she is teaching. The difficulties encountered by teachers in connection with some of these new demands are illustrated in connection with the making of lesson plans in practice teaching, especially in the content subjects. Student teachers are commonly not considered competent to teach any topics except those of which they have had an intensive treatment in departmental courses. Yet very few of the topics they will have to teach in actual school work are covered in these courses. One practice teacher was referred to a departmental head for assistance on a topic which had not been covered in the course. He referred her to a dozen or more large volumes. She worked on them twenty-five hours and came back with the report that there was nothing in them on the topic. This waste of time was partly the fault of the instructor, partly of the system for not providing bibliographical training, and partly the fault of the student.

I was in a Junior class in history in college in which the instructor assigned us individual topics to work up for reports. He said, "Your first step will be to prepare a bibliography." Half of the class had never heard of a bibliography and had never done any systematic reference work.

Training along this line should provide for the following:

(*a*) a short course (from five to ten lessons) by an expert, on the use of standard reference systems and bibliographical aids; (*b*) frequent assignments in all departments of topics to be worked up; (*c*) the requirement of a representative or fairly complete bibliography as the first step in working a topic; (*d*) this bibliography should include not merely exact references, but also a brief description of each reference based on a cursory examination of it.

The second phase of co-operative English work, namely, the preparation of expository briefs, might well take the place of much of the writing of long term papers and other papers which is often required. There is entirely too much of the writing (or often copying) of long papers made up of undigested, unorganized ideas. There is entirely too little of the careful, thoughtful organization of ideas derived from a variety of sources, and of the concise expression of these ideas freed from the lumber of unnecessary words. One remedy is to be found in the requirement that many reports should be put in the form of expository briefs.

By an expository brief I mean the presentation of material in the form of clear, concise, complete statements or sentences, so subdivided, paragraphed, and numbered as to indicate clearly the relative value and subordination of the various points. Hence it differs from the ordinary outline or ordinary summary. This difference must be elaborated to students but need not be here.

The advantages of this type of writing for the student are obvious. It is a mechanical device which practically forces him to attend to the number, relation, and organization of his ideas. In the ordinary long paper these factors do not stand out clearly. The training in concise, exact expression that results is also important.

From the standpoint of the instructor for whom the paper is written the use of the brief is a great time-saver. He can read it in much shorter time and can more easily estimate just what the student has accomplished.

Not only term papers, but also notes on readings can be put in this form to advantage. In one of my undergraduate classes I require students to read periodical articles on the teaching of

special subjects and to report on them in the form of briefs. I can read thirty of these, representing three hundred pages of periodical reading, in two hours. I usually make note of such references and items as interest me. The advantage to the instructor is obvious in this case. Lesson plans put up in the form of briefs make the student much more conscious of the problems of subject-matter and method which confront him in his teaching. Moreover, the plans may be much more quickly read by the critic teacher.

The preliminary training in the making of briefs should be provided in the department of English, and a uniform style established which should prevail in all departments.

The third phase of co-operative work in English, namely, training in oral exposition, is intimately related to the other two, for the oral reports on topics which might be required in all subjects should be preceded by systematic bibliographical work and careful organization of the reports in the form of written briefs.

The great value for teachers of training in systematic, artistic oral exposition is shown in the high grade of this type of work in the schools of Germany. We are not likely to carry exposition by the teacher to the extreme to which it is carried in Germany, but it deserves to play a considerable part in our instruction as supplementary to textbooks and to development lessons. Many of our teachers are especially deficient in oral exposition. They have no standards of excellence and no skill. They may be somewhat skilled in oral narration, but the rambling, hodge-podge, unorganized character of their expository oral discourses is often appalling. Even the experienced teachers whom we find as graduate students in our departments of education are often lamentably weak along this line. Their class reports have been characterized by one instructor as "unmitigated bores."

Again, the remedy is preliminary training in the English department, supplemented by regular oral reports in all other departments. These reports may vary from three minutes to a half-hour in length, and a definite technique of giving them should be developed. This should include very definite and clear assignments by the teacher followed by the bibliographies and briefs

prepared by the students as described above. In making a short oral report the student should not have any notes in his hand, but his brief or some of its more important points should be written on the board. An immature student in the normal school, before presenting his first long oral report to the class, might be required to rehearse it before a committee of two or three students from the class, and the instructor. This provides the necessary audience, breaks the performer in gradually, and saves the time of the class if the report is found to be unsatisfactory for presentation.

From the standpoint of the special department, this method of reporting is, in my estimation, a useful device for freeing individual reports from some of the objections that have been urged against them. From the standpoint of training in expression it provides the first essential, namely, an audience-situation, that is, the pupil with something to say and the group for whom it will be significant.

I first became acquainted with this type of co-operative English work in a high school which I attended. The principal was a teacher of English and provided for this much co-operative work throughout the departments. For purely departmental purposes I have used it in the department of education with all grades of students from those of the normal school to candidates for the Doctor's degree, and I am convinced that it has contributed to the efficiency and interest of everyone concerned, including the instructor.

OBSERVATIONS CONCERNING THE ORGANIZATION OF SCHOOLS AND CERTAIN PHASES OF EDUCATIONAL WORK IN GERMANY. II

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SPECIAL HELP SCHOOLS

Hilfsschulen.—The establishment of special help classes for children whose progress in school is retarded and the *organization of such classes into schools* has made great progress in all parts of Germany, and large and small cities, even villages, conduct such schools.

I am at present not referring to institutions for the feeble-minded where children of lower types of mental weakness are educated to a certain degree of usefulness, but to schools that are established for pupils who are unable to do the regular work required in the courses of the elementary schools in the usual time, and who occupy a place intermediate between the so-called normal pupils and those who are properly placed in institutions for the feeble-minded or idiotic.

Most of the pupils of the *Hilfsschulen* are congenitally weak in intelligence, while in many others faulty development, sickness, or unfavorable surroundings are either the cause of their backwardness or reinforce their innate weakness. Feeble-mindedness is a relative term. We know well enough that in classes of so-called normal children there is no approach to evenness of mentality and that in such classes we have to deal with children who, from the most intelligent member down to the dullest, represent many degrees of congenital endowment, and that not a few of them are *comparatively* feeble-minded. That the latter class is unable to follow the instruction devised for pupils of higher powers is evident; they will not profit by it themselves and moreover become a burden to the class.

Similar considerations led in Milwaukee to a great deal of agitation in favor of ungraded classes and to their establishment. In other American cities, various other arrangements are used experimentally in consideration of the inequality of the natural ability of pupils, in order that at least the two great classes of normal pupils and backward pupils may each have a better chance of progress.

In Germany, Switzerland, and Austria, the movement of caring for these weaker pupils has taken large proportions, and many of the foremost educators, school physicians, and medical specialists are intensely interested in furthering it. Every other year a convention is held where prominent delegates from all parts of the empire and from neighboring countries discuss conditions and means of progress in this particular field. I attended a similar congress, held July 5 and 6 in Altdorf, Switzerland, where an exhaustive report on the *Hilfsschulen* of Switzerland was made and various problems pertaining to mentally and morally backward pupils were discussed by able educators and alienists. The earnestness and ability of these men and their devotion to a difficult and somewhat uninviting phase of work were highly inspiring.

Wherever I investigated these schools for backward children, in Berlin, Charlottenburg, Wittenau, Lübeck, Hamburg, Leipzig, Chemnitz, Dresden, Zürich, I found my opinion confirmed that ungraded classes are not more than makeshifts. Unless the backward pupils of a larger district are brought together to form classes, each representing a grade, and these organized into a school, very much valuable time and effort must be wasted without really benefiting the pupils, not to speak of the excessive burden that is put on the teacher.

Years of experience and observation in special help classes in Germany have demonstrated the fact that the great majority of these children *need a reduced course of study* and special training in schools organized for their need. The late superintendent, Dr. Bertram of Berlin, who had been very reluctant in introducing this innovation, was forced to admit that very few pupils, properly assigned to a special help class, develop sufficiently to carry the work in the regular classes, and that their interests are best served

by promotion through the grades of the *Hilfsschule*. Nothing, of course, prevents a retransfer to the regular grade in favorable cases.

About 1 per cent of the pupils of German elementary schools are found in *Hilfsschulen*. Before being assigned to one of these, a pupil has been tested usually a year and a half in the regular first grade and is then transferred to the *Hilfsschule* upon the judgment of his teachers and the school physician. The records kept for each child by teachers and physicians are highly interesting and instructive. I am prepared to report specially on these records if required.

As many of the pupils have attended school nearly two years before entering the *Hilfsschule*, the organization of the latter comprises six grades. The classes, each containing but one section, are *very small*. In Charlottenburg the number of pupils assigned to a teacher and class is 12 in the lower grades, 14 in the middle grades, and 16 in the upper grades. In Berlin and other cities the numbers are very slightly higher, 14, 16, and 18 pupils per class respectively. It is this organization of primary classes of 12 to 14 pupils, *all being of one group or section*, that permits of a degree of individual attention and care by the teacher that is next to ideal.

One school of this kind that I visited was composed of nine classes. This small school had three shops, one for clay-modeling, one for pasteboard work, and one for woodwork. There was also a large exhibition room, a kind of museum, showing in genetic progression the work to be done along all the lines of activity in that school. A large *Lehrmittel* room was also provided which contained a rich supply of material for object lessons, so much needed with backward children. While manual training is optional for children of the elementary schools it is considered absolutely essential in the training of backward pupils. Singing, gymnastics, walks in the city, to parks, and to the woods form part of the program.

Stutterers and stammerers are instructed 2–4 hours a week by specialists.

To show the reduced and simplified course of these schools,

I insert the weekly time table of the *Hilfsschulen* at Berlin for comparison with that of the regular classes on p. 191.

HILFSSCHULE—BERLIN

HOURS PER WEEK

	Grade 6 (lowest)	Grade 5	Grade 4	Grade 3	Grade 2	Grade 1 (highest)
Religion	3	3	3	3	3	3
Reading, writing, language, spelling	5	5	5	5	6	6
Arithmetic	4	4	4	4	4	4
Object lessons	4	4	4	4	6	6
Manual training	4	4	4	4	4	4
Drawing	..	..	1	1	1	1
Singing	1	1	1	1	2	2
Gymnastics—games	1	1	2	2	2	2
	22	22	24	24	28	28

The large amount of time given to object lessons and manual training is worthy of attention. The elements of geography, history, and nature-study are taught as object lessons. The teachers present only what is most essential and practical and an especial effort is made in these schools to make the instruction vivid, real, and objective. Slow progress, repetitions, frequent reviews, presentation of the subject-matter from various viewpoints are of great value and of necessity with backward pupils. These processes cause even the duller pupils to comprehend things that would remain Greek to them during the more rapid and comprehensive instruction in the regular classes. The feeling of satisfaction and joy that comes to the backward pupils when they discover that they learn to know and to do things which were formerly dead to them acts as a stimulus to their interest in new matters and to their hopefulness of making further progress. But it is clear that the separation of these backward pupils is not only a very decided advantage to them but also to the regular classes. A considerable portion of the school time and a much greater portion of the teacher's nervous energy is saved by their removal, and time and energy may now be applied to a more evenly graded class, one that is more nearly capable of receiving instruction as a body; and therefore better mastery of the subject-matter and more rapid progress is insured.

Hilfsschule pupils who leave school at the age of fourteen or fifteen years have an opportunity, in fact they are obliged, to continue their school studies and their manual work a number of hours each week, in a continuation school especially organized for their needs.

SCHOOLS FOR THE FEEBLE-MINDED

A study of the institutions for the training of children of low mentality is instructive from many points of view but particularly for the lessons in patience and skill exhibited by the teachers who make a specialty of this work. Some of these institutions are models of that type of schools that have full control of the child's education, regulating and guiding every step of his life for a number of years. One of the grandest examples of this class is the Landes-Erziehungs-Anstalt in Altendorf near Chemnitz.

Its location is very healthful and ideal, on gently sloping ground near the Crimmitschau forest, overlooking city and surrounding country. The city of Chemnitz agreed to preserve the forest in its present extent "forever" and grant admission to the woods to the members of the school at all times. The grounds belonging to the school cover an area of about 170 acres, about two-thirds of which is used for gardening and farming. A rectangle about 1,300 feet wide and 1,650 feet long contains the beautiful buildings which are surrounded by tastefully arranged gardens, ample playgrounds and fine gravel walks. Among the thirty-eight buildings which are constructed in the villa style, may be mentioned three schoolhouses, a chapel, a gymnasium, a central bathhouse, kitchen and dining-hall, several buildings containing shops, an administration building, dwelling-houses for the pupils and for the officers and teachers, a dairy, a central heating and lighting plant, and a hospital. No two of these buildings are alike, each presenting an architectural individuality of its own, and yet the whole complex impressing the observer with its harmony of conception. This school can accommodate only eight hundred pupils, but the cost of the buildings and their outfit amounted to about four and a half million marks, more than a million dollars.

Careful attention to modern hygienic requirements, the most scrupulous order, neatness, and cleanliness are apparent through-

out. Classrooms and living-rooms are made comfortable by a liberal supply of good furniture, and the cheerfulness of the occupants is promoted by pictures, decorations, songbirds, aquariums, and plants.

Each of the three school buildings has only nine classrooms, but in addition, each has two *Lehrmittel* rooms well supplied with material for object lessons. One of the classrooms in each school building is very large and is furnished with a grand piano for instruction in music.

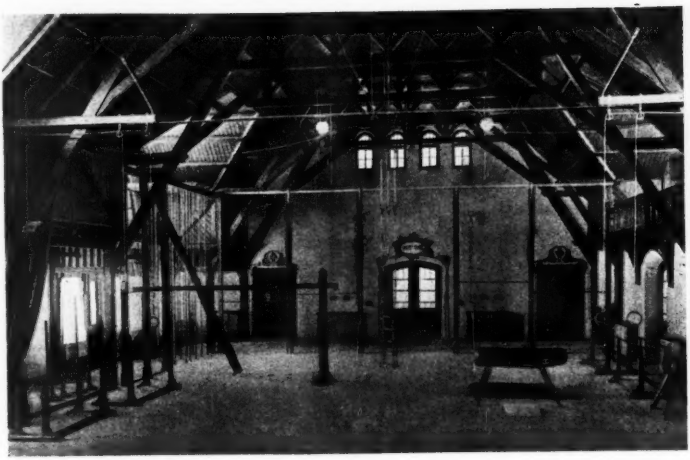
The accompanying pictures show the exterior and interior of the hall for gymnastic exercises, which also serves as assembly hall on special occasions, and is provided with a stage.

The teachers of Milwaukee and their friends have long been hoping for the establishment of a parental school. If ever this dream should be realized, a careful study of the plans, in all their details, of the Landes-Erziehungs-Anstalt near Chemnitz should not be neglected.

The methods of education and of instruction in these schools are based on the results of psychological research confirmed by long experience with mentally weak children. The fundamental principle is the stimulation to conscious and voluntary activity. Not the mechanical acquisition of a quantity of knowledge but the training to useful work is the main object of all educational processes in these institutions. The classes in school and the "families" out of school are *very small*, numbering *about twelve pupils*, and each is composed of pupils that are physically and mentally as nearly equal in grade as possible. This careful grading of classes is considered as absolutely fundamental for success. The development of the work through ten steps or grades and the numerous classes within this range, enable the teachers to place each child where he can do his best.

The four lowest grades comprise the *Vorschule*, the preparatory department, whose function is the training of the pupils' senses to observe properly the objects that surround them and to form concepts of these and of their qualities by numerous activities. A considerable portion of time is devoted to practical exercises in attending to themselves; learning to know the articles of dress,

GYMNASTIC HALL



INTERIOR OF GYMNASTIC HALL

their use, their material; utensils used in washing and bathing and the application of these. Regular use of the toothbrush is insisted upon. The pupils learn by frequent exercises to dress and undress and to aid each other in doing so, to clean their clothing and shoes, and to habituate themselves to orderliness in hanging or placing articles of dress and other objects, and in keeping their rooms in an orderly and neat condition. They have exercises in finding their way in the room and in the house, in the yard, on playgrounds, and in gardens, also to the places that have been visited on walks in the neighborhood. Polite behavior is also established by daily exercise.

A glance at the program for these lower four grades shows that only a small part of the time is devoted to regular school work, and during that time there is hardly a minute when the children are not "acting out" what is being taught. The lessons last 45 minutes and each is followed by 15 minutes' recess on the playground.

The distribution of work, in hours per week, is as follows for the *preparatory four grades or steps:*

	Grade I	Grade II	Grade III	Grade IV
Object lessons	6	6	6	5
Reading	..	..	..	4
Counting exercises	..	..	..	2
Singing	1	1	2	2
Gymnastics and play	4	3	3	3
Attending to themselves	6	6	4	4
Sorting of substances	..	2	2	1
Work with colored beads	3	3	..	..
Building	2	2	..	..
Folding and weaving	..	2	3	2
Placing colored sticks	..	..	2	2
Braiding	..	..	2	2
Claywork	..	..	1	1
Work with mosaic blocks	..	..	..	1
Total hours per week	22	25	25	29

The principal aim of this plan is to acquaint the pupils with objects, their qualities and properties; to train their perceptive faculty. Nothing is memorized but everything is learned by experience. In the *six grades of the school proper* the work, in hours per week, is distributed as follows:

	Grade VI (Lowest)	Grade V	Grade IV	Grade III	Grade II	Grade I (Highest)
Religion	..	4	4	4	4	4
Story telling	3	..	..	..	..	..
Reading, writing, language, spelling	6	6	6	6	6	6
Arithmetic	3	3	3	3	3	3
Object lessons	4	3	3	3	1	1
Home geography	..	..	..	1	2	2
Singing	2	2	2	2	2	2
Drawing	1	1	1	1	2	2
Gymnastics and play	3	3	3	3	3	3
Manual Training	**9**	**9**	**10**	**10**	**11**	**13**
	31	31	32	33	34	36

In the higher grades, too, the development of manual skill is a prominent feature.

The processes by which it is attempted to reach the aim of this school, the training to conscious voluntary activity, are very interesting and instructive, and particularly so in the preparatory department where children of very low mentality are found, but these methods cannot be discussed in this report, as only a detailed and extended description would be of value, and that would form a special report.

Not a few of the weak-minded children who are found capable of training when first examined and observed, reach a point in their development where they come to an intellectual standstill and where they can no longer progress with their class in school or in the shops. To prevent retrogression, these children are instructed in school a short time every day and during the greater part of the day are trained to do some useful work within their capacity in so-called "work classes." One of these classes was composed of girls who had reached but the third grade of the preparatory department, two of boys who had reached but the second and fourth grades respectively of that department, while with others arrest of development occurred in one of the grades of the regular school.

Nowhere is demonstrated more clearly that with the best of teaching the progress of pupils must vary greatly in consequence of the natural endowment and of intercurring developmental conditions over which the educator has absolutely no control.

The institutions for feeble-minded children in Wittenau near Berlin and in Alsterdorf near Hamburg are organized and conducted, in theory and practice, essentially on the same principles; everywhere we find systematic efforts of promoting the physical conditions of the child and of arousing and stimulating his feeble mental powers by constant activity. The pupils are employed in a variety of occupations and are finally trained in one, so that they may become competent and possibly independent workers in some trade.

The literature concerning the education of weak and backward children is quite rich in Germany and the institutions mentioned above, as well as the *Hilfsschulen*, are liberally supplied with these books. A small school in Dresden of ten classes and 140 pupils is provided with a library of several hundred of such special works for the use of the teachers.

[*To be continued*]

ANALYSIS OF COLBURN'S ARITHMETICS. IV

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The appearance of Warren Colburn's arithmetics (*First Lessons* and *Sequel*), marked the beginning of a new epoch in the development of arithmetic and arithmetic teaching in the United States. The principal features of these texts may be classed under three heads: (1) the introduction of oral instruction, (2) his ideas about the subject-matter of arithmetic and its organization, and (3) his recognition of sound educational principles. It is the purpose of the writer to present evidence of these features from Colburn's writings.

ORAL INSTRUCTION

To appreciate the significance of Warren Colburn's introduction of oral instruction into arithmetic teaching, it is necessary to recount briefly the method of instruction prevailing before his time. This method may be characterized as the "Cyphering Book" method. In the earlier times rarely did either the teacher or pupil possess a text. Each pupil was provided with a blankbook made of a quire of paper folded and sewed together. The teacher either dictated or set "sums" which the pupil worked on scraps of paper. After the work had been approved by the teacher it was carefully copied in the "Cyphering Book." Such rules as the pupil needed were given by the teacher. Thus the arithmetic work was written as well as being deductive.

Later, when arithmetic texts began to be used in the schools, the method of instruction was not materially changed. For example, in beginning addition the pupil was first given the rule and then as the first problem asked to find the sum of several numbers, some of which were often composed of five or six digits. And similarly in other topics, the first problems were such as to require the use of pencil and paper. Since the numbers were so large that they were beyond the comprehension of the pupil, the work must have appeared to him as a mere juggling with written symbols.

In contrast to this, Colburn does not provide for written computations in the *First Lessons*. In fact he does not introduce the number symbols at all in the first third of the book. Thus the pupil is compelled to perform the operation mentally and to give the result orally. Furthermore, the quantities of the problems throughout the book are small enough to bring the number within the comprehension of the pupil and also so small that he may do the problems mentally. It is therefore probable that pupils solved the problems of the *First Lessons* without recourse to written calculation. When there were no "sums" to be done on paper or slate and submitted to the teacher for inspection, it became necessary for the teacher to hear the pupils give an oral solution of the problem. Thus at least in the case of the younger pupils arithmetic teaching came to be largely oral after the appearance of the *First Lessons*.

Oral instruction required the operations to be performed mentally, i.e., without recourse to written symbols, and the method of oral instruction is probably most widely known as "mental arithmetic."

This feature is not made prominent in the *Sequel* but close connection is made between "operations performed in the mind" and the "application of figures to these operations."

THE SUBJECT-MATTER OF ARITHMETIC AND ITS ORGANIZATION

In his analysis of the subject-matter of arithmetic, Colburn distinguishes between the processes of arithmetic, which he calls "principles," and the applications of arithmetic, which he designates as "subjects." To him the "principles" mean arithmetic and the applications merely a field for the exercise of these principles. Denominate numbers, mensuration, percentage, interest, etc., are not taken as the basis for separate chapters, or even distinct topics. "To give the learner a knowledge of the principles" is his purpose, and to this end the problems are grouped about the principles.

Colburn takes the position that "when the principles are well understood, very few subjects will require a particular rule, and if the pupil is properly introduced to them, he will understand them better without a rule than with one." This is to say, for example, that if a pupil understands well the relation between a product and

its factors in all its phases, percentage and its applications require no particular rule and will present no difficulty to the learner. At most, the learner will need to be told the meaning of the new terms used in expressing the problem.

As we would naturally expect from such a point of view, the applications of arithmetic do not influence nor determine the structure of Colburn's texts. To give an idea of the content of the texts and the organization of the subject-matter, the section headings of the *Sequel* are given below.

I. Numeration and notation.
II. Addition.
III. Multiplication, when the multiplier is a single figure.
IV. Compound numbers, factors, and multiplication, when the multiplier is a compound number.
V. Multiplication, when the multiplier is 10, 100, 1000, etc.
VI. Multiplication, when the multiplier is 20, 300, etc.
VII. Multiplication, when the multiplier consists of any number of figures.
VIII. Subtraction.
IX. Division, to find how many times one number is contained in another.
X. Division. Explanation of fractions. Their notation. What is to be done with the remainder after division.
XI. Division, when the divisor is 10, 100, etc.
XII. To find what part of one number another is, or to find the ratio of one number to another.
XIII. To change an improper fraction to a whole or mixed number.
XIV. To change a whole or mixed number to an improper fraction.
XV. To multiply a fraction by a whole number, by multiplying the numerator.
XVI. Division, to divide a number into parts. To multiply a whole number by a fraction.
XVII. To divide a fraction by a whole number. To multiply a fraction by a fraction.
XVIII. To multiply a fraction by dividing the denominator. Two ways to multiply, and two ways to divide a fraction.
XIX. Addition and subtraction of fractions. To reduce them to a common denominator. To reduce them to lower terms.
XX. Contractions in division.
XXI. How to find the divisors of numbers. To find the greatest common divisor of two or more numbers. To reduce fractions to their lowest terms.
XXII. To find the least common multiple of two or more numbers. To reduce fractions to the least common denominator.
XXIII. To divide a whole number by a fraction, or a fraction by a fraction, when the purpose is to find how many times the divisor is con-

tained in the dividend. To find the ratio of a fraction and a whole number, or of two fractions.

XXIV. To divide a whole number by a fraction, or a fraction by a fraction; a part of a number being given to find the whole. This is on the same principle as that of dividing a number into parts.

XXV. Decimal fractions. Numeration and notation of them.

XXVI. Addition and subtraction of decimals. To change a common fraction to a decimal.

XXVII. Multiplication of decimals.

XXVIII. Division of decimals.

XXIX. Circulating decimals. Proof of multiplication and division by casting out 9's.

Even the subdivisions and order of the "principles" are unusual. Multiplication of integers follows addition instead of subtraction. In fractions, multiplication is placed first and is followed by addition and subtraction. Both multiplication and division of fractions are divided into several cases.

The *Sequel* is divided into two parts. The first consists of graded lists of problems with an occasional suggestive note to define some new term or to interpret the meaning of the problem. "The second part contains a development of the principles" based upon problems.

The two parts are to be studied together, when the pupil is old enough to comprehend the second part by reading it himself. When he has performed all the examples in an article in the first part, he should be required to recite the corresponding article in the second part, not verbatim, but to give a good account of the reasoning. When the principle is well understood, the rules[1] which are printed in italics should be committed to memory.

The Table of Contents of the *Sequel* makes no mention of any of the applications of arithmetic, several of which usually have a chapter devoted to them. However, one must remember that it is Colburn's plan to teach the principles through their use in solving problems. He says:

As the purpose is to give the learner a knowledge of the principles, it is necessary to have the variety of examples under each principle as great as possible. The usual method of arrangement, according to subjects, has been on this account entirely rejected, and the arrangement has been made according to principles. Many different subjects come under the same principle; and different parts of the same subject frequently come under different principles.

[1] Few rules are given and such as are given are placed at the end of a section. The rule is the result of a process of development. Colburn gives rules only for the principles.

Colburn mentions the following "subjects" as being specifically included in the text: Compound Multiplication, Addition, Subtraction, and Division; Simple Interest, Commission, Insurance, Duties, and Premiums, Common Discount, Compound Interest, Discount, Barter, Loss and Gain, Simple Fellowship, Compound Fellowship, Equation of Payments, Alligation Medial, Alligation Alternate, Square and Cubic Measure, Duodecimals, Taxes, Mensuration, Geographical and Astronomical Questions, Exchange, Tables of Denominate Numbers.

Colburn omits some topics entirely. He specifically mentions the Rule of Three, Position, and Powers and Roots. The reasons he gives for their omission are:

> Those who understand the principles sufficiently to comprehend the nature of the rule of three, can do much better without it than with it, for when used, it obscures, rather than illustrates the subject to which it is applied.
>
> . . . . This (the rule of Position) is an artificial rule, the principle of which cannot be well understood without the aid of Algebra; and when Algebra is understood, Position is useless. Besides, all the examples which can be performed by Position, may be performed much more easily, and in a manner perfectly intelligible, without it.
>
> Powers and Roots, though arithmetical operations, come more properly within the province of Algebra.

It is interesting to note that some of the omissions which Colburn made nearly a century ago are still considered by some individuals to be debatable.

Not only in his arrangement of topics but also in the very subject-matter itself does Colburn differ radically from the writers of arithmetic who preceded him. In Daboll's *Schoolmaster's Assistant*, which was probably more extensively used in the United States after 1800 than any other arithmetic before Colburn's, the pupil was introduced to the subject as follows:

> Arithmetic is the art of computing by numbers, and has five principal rules for its operations, viz., Numeration, Addition, Subtraction, Multiplication, and Division.
>
> NUMERATION
>
> Numeration is the art of numbering. It teaches to express the value of any proposed number by the following characters, or figures:
>
> 1, 2, 3, 4, 5, 6, 7, 8, 9, 0—or cypher.
>
> Besides the simple value of figures, each has a local value, which depends upon the place it stands in, viz., any figure in the place of units, represents

only its simplest value, or so many ones, but in the second place, or place of tens, it becomes so many tens, or ten times its simple value. . . . .

In the *Scholar's Arithmetic* by Daniel Adams, which was another widely used book in Colburn's time, the subject is begun as follows:

Arithmetic is the art or science which treats of numbers.

It is of two kinds, theoretical and practical.

The theory of arithmetic explains the nature and quality of numbers, and demonstrates the reason of practical operations. Considered in this sense, arithmetic is a science.

Practical arithmetic shows the method of working by numbers, so as to be most useful and expeditious for business. In this sense arithmetic is an art.

There are six pages of definitions of this sort and an explanation of the system of notation before any problems are given.

Contrast these with the way Colburn introduces the pupil to arithmetic:

FROM "FIRST LESSONS"[1]

1. How many thumbs have you on your right hand? how many on your left? how many on both together?

2. How many hands have you?

3. If you have two nuts in one hand, and one in the other, how many have you in both?

4. How many fingers have you on one hand?

5. If you count the thumb with the fingers, how many will it make?

6. If you shut your thumb and one finger, and leave the rest open, how many will be open?

7. If you have two cents in one hand, and two in the other, how many have you in both?

8. James has two apples, and William has three; if James gives his apples to William, how many will William have?

FROM "SEQUEL"[2]

1. James has 3 cents and Charles has 5; how many have both?

2. Charles bought 3 buns for 16 cents, a quart of cherries for 8 cents, and 2 oranges for 12 cents; how many cents did he lay out?

3. A man bought a hat for 8 dollars, a coat for 27 dollars, a pair of boots for 5 dollars, and a vest for 7 dollars; how many dollars did the whole come to?

In Adams' *Scholar's Arithmetic* division is begun as follows:

Simple division teaches, having two numbers given of the same denomination, to find how many times one of the given numbers contains the other.

[1] This and all other citations in this article from the *First Lessons* refer to an edition of 1847.

[2] This and all other citations from the *Sequel* refer to the edition of 1826.

Thus, it may be required to know how many times 21 contains 7; the answer is 3 times. The larger number (21) or number to be divided, is called the *Dividend;* the lesser number (7) or number to divide by, is called the *Divisor;* and the answer obtained (3) the *Quotient.*

After the operation, should there be anything left of the dividend, it is called the *Remainder.* This part, however, is uncertain; sometimes there is no remainder. When it does happen it will always be less than the divisor, if the work be right, and of the same name with the dividend.

RULE

1. "Assume as many figures on the left hand of the dividend as contain the divisor once or oftener; find how many times they contain it, and place the answer as the highest figure of the quotient.

2. "Multiply the divisor by the figure you have found, and place the product under the part of the dividend from which it was obtained.

3. "Subtract the product from the figures above it.

4. "Bring down the next figure of the dividend to the remainder and divide the number it makes up as before."

When you have brought down a figure to the remainder, if the number it makes up be still less than the divisor, a cypher must be placed in the quotient, and another figure brought down.

One example, "Divide 127 by 5," is worked out and explained. Two other problems with divisors of two digits are worked out but not explained. In all there are 11 problems in the list, all abstract.

Colburn begins division in the *First Lessons* by asking, "How many apples, at one cent apiece, can you buy for four cents?"

Twenty-three problems of this sort are given before any attempt is made to consider division as a process. Then it is first considered in a practical problem, and immediately following, the same combination is called for in an abstract problem.

These quotations are typical of the texts of Daboll and Adams. They are also illustrative of the prevailing attitude toward the subject-matter of arithmetic before Colburn's texts appeared. It is very evident that he had a different notion of the subject-matter of arithmetic.

Colburn invariably introduces a topic or a new combination by a "practical question." If the topic or combination is new, the "practical question" is followed by the same problem in abstract form. For example, the following is taken from p. 94 of the *First Lessons:*

1. If a yard of cloth cost 3 dollars, what will 1 half of a yard cost?
2. What is 1 half of 3?

3. If a barrel of beer cost 5 dollars, what will 1 half of a barrel cost?
4. What is 1 half of 5?
5. If 2 barrels of cider cost 7 dollars, what is that a barrel?
6. What is 1 half of 7?
7. What is 1 half of 9?
8. What is 1 half of 11?

One phase of the organization of the subject-matter is Colburn's treatment of the symbols of notation which seems to exemplify one of his fundamental notions of arithmetic. For example, he wishes the pupil to learn that two objects and one object make a total of three objects; that five plums and four plums are nine plums, and *not* that the symbols 2+1 equal the symbol 3, or the symbols 5+4 equal the symbol 9. As a means to this end, in the *First Lessons*, the characters 1, 2, 3, ... are not given until p. 50 and the system of notation and numeration is not given beyond 10 until p. 69. Before these symbols and the system of notation and numeration are given, the pupil has learned the four fundamental operations for integers. The symbols are introduced by saying, "Instead of writing the names of numbers, it is usual to express them by particular characters called figures." Thus before the pupil is asked to learn the number symbols, he doubtless has felt the need for them. For this reason he is more likely to appreciate their meaning and usefulness.

Another feature of Colburn's texts is that, so far as I am aware, they represent the first explicit attempt to write a series of arithmetic texts. The *Sequel* is a continuation of the *First Lessons* and yet begins with the first of arithmetic. The *Sequel* is the equivalent in scope and type of problems to the other arithmetics of that time, but the *First Lessons* is a pioneer in a new field. The author intended it to be especially adapted to young children. It is stated in the edition of 1847 that "almost any child of five or six years is capable of understanding more than half the book, and those of seven or eight years old can understand the whole of it."

[*To be continued*]

BOOK REVIEWS

The Learning Process. By S. S. COLVIN. New York: Macmillan, 1911. Pp. xxv+336.

The scope of this book is broader than might be inferred from the title. It is, in fact, a textbook upon educational psychology. The general standpoint of the author is indicated by the title. The book is not, however, a discussion of the learning process in so far as the learning process means specifically the acquirement of knowledge or skill. It includes these forms of development, but also includes a general analysis of the psychological processes which are usually treated in introductory psychology. The appropriateness of the title lies in the fact that the point of view from which the various topics are treated is the functional point of view. The mental life, that is, is treated as a means to the adaptation of the individual to the conditions of his life, and this adaptation may be spoken of as learning in its broadest sense.

The book may, then, be regarded as educational, first, because it deals with mental processes from the functional standpoint. In the second place, there are in the course of the discussion frequent references to the application of the principles evolved to the teaching and the learning processes. There is also considerable reference to the development of the various functions in the child, which further adapts the treatment to the needs of education.

We may say that the book is a general psychology rewritten in such a way as to make it applicable to education. The order and selection of topics are the same as those which would be found in a general textbook of psychology. For example, in the early chapters occur the topics reflex action, instinct and habit, sensation and perception. These are followed by chapters upon imagination, memory, association, attention and interest, and the higher thought-processes. Interspersed among these chapters are chapters in which the special application of the matter which is treated in a more theoretical way in the previous chapters is made to education. The fact that the book is in the main the conventional type above described is further shown by the absence of material which has been developed recently, based upon the experimental analysis of school subjects—such material, for example, as is found in the works on experimental education by Meumann and Rusk. Such material unquestionably must be incorporated into a textbook upon educational psychology if it is not in fact made the basis of such a treatment.

Although the *Learning Process* does not, then, make a very radical departure from the traditional text of educational psychology, nevertheless it gives much material which is of value to the teacher. The author has evidently had contact with educational problems and uses frequent illustrations from the schoolroom to make clear the principles which he is describing. In the more general processes, such as habit, memory, learning in the narrow sense of the acquisition of skill, and the transfer of training and of fatigue, the discussion is of the sort which is needed in an educational psychology. The treatment of some of the other psychological processes, such as perception, imagination, association, etc., is rather too general and far removed from the actual problems of education best to fulfil the needs of an educational psychology.

The book, however, will be tried with a good deal of interest since it goes farther than previous texts in the field, and is in some respects the most satisfactory attempt to cover the new field of educational psychology which has yet been made. The book is adapted for use with classes in normal schools or colleges who have had no psychology and who are taking a beginning course in educational psychology.

FRANK N. FREEMAN

UNIVERSITY OF CHICAGO

A Report on Vocational Training in Chicago and in Other Cities. By GEORGE H. MEAD, ERNEST A. WREIDT, WILLIAM J. BOGAN, Subcommittee of the Committee on Public Education, 1910–11, of the City Club of Chicago. Published by the City Club of Chicago, 1912. Pp. xiii+315.

This report consists of four sections. In the first section the recommendations which the committee has to make as a result of its investigations are set forth in detail. In the second section a large body of information about schools is presented. The first chapters of this section show the extent of retardation and elimination and the waste suffered by the individual and by society through a failure of the ordinary school to provide for children from fourteen to sixteen years of age. The next chapters present a study of the attitude of organized labor toward the whole matter of industrial education. Then follow a number of chapters describing the efforts which are being made in Chicago and in other cities to develop school agencies which can meet the demand for improved industrial training of children. The reports on schools are based on visitations made by one of the members of the committee and are very comprehensive, including all the typical industrial schools and classes in this country.

Part three reports the facts regarding business colleges and commercial schools. Curiously enough the business colleges have grown up and flourished in this country altogether out of relation to the trade schools. In Germany the trade school came first and the commercial course grew up as a departmental course within the trade school. In America the wages commanded by those who are trained to do clerical work furnished a practical motive for the private organization of commercial courses long before any system of industrial education was seriously considered. The fact that this report deals with the commercial schools distinguishes it from the ordinary reports of commissions on industrial education. Most of the reports on industrial education have reviewed the industrial schools as does the second section of this report, but few refer to the problem presented by the business colleges and commercial schools.

The fourth section of the report gives the results of a series of tests in which boys who left school to go to work as soon as the law permitted, regardless of their advancement in the grades, are investigated with reference to their ability to solve simple problems in arithmetic, with reference to their ability to understand and write simple English, and with reference to their knowledge on simple matters of civil government and history. These tests show that such boys are very deficient in all lines in which they were tested. The significance of these results is very great. The work done in the schools evidently does not carry over into life, and life of the ordinary type does not stimulate mental activity of the kind cultivated in the school.

The large body of convincing information which the report contains will do much to promote interest in the development of industrial education. The first section of the report will do much to help direct this interest into the right channel. There

are many sentences in this part of the report which are worth quoting. The following extracts give an idea of the position of the subcommittee:

"Our elementary school curriculum undertakes more than can be accomplished by a large percentage of the children during the period of eight school years. The over-age of one-third of the children is convincing evidence that they cannot complete this curriculum inside of the time during which the law keeps them in school; and neither the interest of the child nor that of his parents keeps him there when the law has withdrawn its hand" (p. 4).

"In the opinion of your committee, a discussion of the question of reducing the content of the curriculum of the American school or of increasing the school time while the content of the curriculum remains the same would have only academic interest. The influences which have forced continually new material into that curriculum are fundamental influences in our schools and in the community at large. They are as American as are our public schools. There is no reason to believe that the elementary school curriculum will be cut down and school time increased to such an extent that over-age will disappear and thus automatically eliminate elimination. Nor would it be reasonable to simply adopt the other half of the German program and to try to meet the ineffective education which follows upon elimination by continuation classes (pp. 5 and 6).

"Again, it is the generally accepted judgment of educators that the boy and girl in the neighborhood of fourteen are so much interested in the society into which they expect to enter and the occupations of men and women in that society, that a school which does not appeal to the vocational motive is bound to lose the interest of a great number of these children" (p. 6).

"The first part of our recommendation is, therefore, a plan worked out in some detail, of a type of school in which half of the time in the seventh and eighth grades may be given to vocational work, while during the other half of the school time we are confident that as much can be accomplished in the academic studies as is accomplished today. We recommend for these vocational grades a school day of six hours instead of the present five hours and a rearrangement of the time given to different subjects" (p. 7).

"Our great contention is that vocational training be introduced into our school system as an essential part of its education—in no illiberal sense and with no intention of separating out a class of workingmen's children who are to receive trade training at the expense of academic training. We are convinced by what we have found elsewhere in America, as well as in other countries, that such a division is unnecessary. We are convinced that just as liberal a training can be given in the vocational school as that given in the present academic schools. Indeed, we feel that the vocational training will be more liberal if its full educational possibilities are worked out" (p. 9).

The conclusions to which this committee comes are diametrically opposed to those which underlie the Massachusetts plan and to those which Mr. Cooley presents in his report to the Commercial Club of Chicago. The position defended in the present report is however so typically American, so clearly feasible as a school program, and so simple to put into operation as contrasted with the plan of special and separate schools, that it is certainly worthy of careful consideration before any other course is adopted. It is the belief of the present reviewer that it is the position which will ultimately be universally adopted in American schools.

C. H. J.

BOOKS RECEIVED

AMERICAN BOOK CO., NEW YORK

High School Geography, Physical, Economic, and Regional. By CHARLES REDWAY DRYER, Professor of Geography and Geology, Indiana State Normal School. Half Leather. Illustrated. Pp. 536. $1.30.

Essentials of French. By VICTOR E. FRANCOIS, PH.D., Associate Professor of French in the College of the City of New York. Cloth. Pp. 426. $0.90.

Physical Laboratory Guide. By FREDERICK C. REEVE. Cloth. 12mo, pp. 192. Illustrated. $0.60.

Plane and Solid Geometry. By C. A. HART and DAVID D. FELDMAN. Edited by J. H. and VIRGIL SNYDER. Cloth. Illustrated. Pp. 496. $1.25.

Seth of Colorado. A Story of the Settlement of Denver. By JAMES OTIS. Cloth, 12mo, pp. 147. Illustrated. $0.35.

Bookkeeping and Accounting Exercises. By R. J. BENNETT. Cloth. Illustrated. Part I. Pp. 96. $0.40. Part II. Pp. 112. $0.45.

Manual of Experimental Botany. By FRANK OWEN PAYNE, M.Sc. Cloth. 12mo, pp. 272. Illustrated. $0.75.

Forge Work. By WILLIAM L. ILGEN. Edited by CHARLES F. MOORE. Cloth. Illustrated. 12mo, pp. 210. $0.80.

"Masterpieces of the English Drama Series." *Webster and Tourneur.* Pp. 464. *Christopher Marlowe.* Pp. 426. *Beaumont and Fletcher.* Pp. 414. Edited by FELIX E. SCHELLING, Professor of English Literature, University of Pennsylvania. Cloth. 12mo, $0.70, each.

Hygiene for the Worker (Crampton's "Hygiene Series"). By WILLIAM H. TOLMAN, PH.D., and ADELAIDE WOOD GUTHRIE. Edited by C. WARD CRAMPTON, M.D. Cloth. Illustrated. Pp. 231. $0.50.

English Grammar. By LILLIAN G. KIMBALL. Cloth. Illustrated. 12mo, pp. 271. $0.60.

D. APPLETON & CO., NEW YORK

Principles of Educational Practice. By PAUL KLAPPER, PH.D., Instructor of Education, College of the City of New York. Cloth. Pp. 476.

A Reader for the Eighth Grade. By CLARENCE F. CARROLL and SARAH C. BROOKS. Cloth. Pp. 286.

A. S. BARNES CO., NEW YORK

After Long Years and Other Stories. Translations from the German by SOPHIE A. MILLER and AGNES M. DUNNE. ("Sunshine and Shadow Series.") Cloth. Illustrated. Pp. 241.

THE CENTURY CO., NEW YORK

Famous Pictures. Famous Pictures Described with Anecdotes of the Painters. By CHARLES L. BARSTOW. Cloth. 78 Illustrations. Pp. 239. $0.60.

DOUBLEDAY, PAGE & CO., NEW YORK

New Demands in Education. By JAMES PHINNEY MUNROE. Cloth. Pp. 312. $1.25.

GINN & CO., NEW YORK

The Dramatic Method of Teaching. By HARRIET FINLEY-JOHNSON. Edited by ELLEN M. CYR. Cloth. Illustrated. Pp. 199. $1.00.

Education as Growth or the Culture of Character. By L. H. JONES, A.M., President Michigan State Normal College. Cloth. Pp. 275.

A Dramatic Version of Greek Myths and Hero Tales. By FANNY COMSTOCK. Cloth. Illustrated. Pp. 191. $0.45.

HARPER & BROTHERS, NEW YORK

The Montessori System, in Theory and Practice. By DR. THEODATE L. SMITH of Clark University. Cloth. Illustrated. Pp. 78. $0.60.

D. C. HEATH & CO., NEW YORK

Lessons in the Speaking and Writing of English. Book One, *Language Lessons.* By JOHN M. MANLY, Head of the Department of English, University of Chicago, and ELIZA R. BAILEY. Cloth. Illustrated. Pp. 299. $0.45.

Civics in Simple Lessons for Foreigners. By ANNA A. PLASS. Cloth. Illustrated. Pp. 187.

HENRY HOLT & CO., NEW YORK

A Montessori Mother. By DOROTHY CANFIELD FISHER. Cloth. Illustrated. Pp. 240. $1.25.

HOUGHTON MIFFLIN CO., NEW YORK

English for Foreigners. By SARA R. O'BRIEN. Book Two. Cloth. Illustrated Pp. 248. $0.70.

Sixth Reader. "The Riverside Readers." By JAMES H. VAN SICKLE and WILHELMINA SEEGMILLER, assisted by FRANCES JENKINS. Cloth. Illustrated. Pp. 276. $0.55.

LITTLE BROWN & CO., BOSTON

The English History Story-Book. By ALBERT F. BLAISDELL and FRANCIS K. BALL. Cloth. Illustrated. Pp. 198. $0.50.

LONGMANS, GREEN & CO., NEW YORK

Atalanta's Race and The Proud King. (From *The Earthly Paradise.*) By WILLIAM MORRIS. With introduction and Notes. Cloth. Pp. 60. $0.35.

MACMILLAN CO., NEW YORK

The Administration of Public Education in the United States. By SAMUEL TRAIN DUTTON, LL.D., Professor of School Administration in Teachers College, Columbia University, and DAVID SNEDDEN, PH.D., Commissioner of Education, State of Massachusetts. Cloth. Pp. 607.

The Art of Education. By IRA WOODS HOWERTH, A.M., PH.D., Professor of Education in the University of California. Cloth. Pp. 237.

Great Opera Stories ("Everychild's Series"). Translated from Old German Original Sources by MILLICENT S. BENDER. Cloth. Illustrated. Pp. 186.

Historical Plays for Children ("Everychild's Series"). By GRACE E. BIRD and MAUDE STARLING. Cloth. Illustrated. Pp. 292. $0.40.

Nonsense Dialogues for the Youngest Readers ("Everychild's Series"). By ELLEN E. KENYON-WARNER. Cloth. Illustrated. Pp. 168. $0.40.

CHARLES E. MERRILL CO., NEW YORK

The Merrill Speller. By J. ORMOND WILSON. Cloth. Book One. Pp. 132. Book Two. Pp. 251.

Durell's Elementary Arithmetic. Pp. 410. $0.48.

Durell's Advanced Arithemtic. Pp. 484. $0.64. By FLETCHER DURELL, PH.D., and ELIZABETH HALL. Cloth. Illustrated.

THE MANUAL ARTS PRESS, PEORIA, ILL.

Manual Training Toys for the Boy's Workshop. By HARRIS W. MOORE. Cloth. Illustrated. Pp. 111. $1.00.

STEWART & KIDD CO., CINCINNATI

The Soul and Sex in Education. By JIRAH D. BUCK, M.D. Cloth. Pp. 175. $1.25.

ROW, PETERSON & CO., CHICAGO

"Reading-Literature Series." *First Reader.* Pp. 134. *Second Reader.* Pp. 191. *Third Reader.* Pp. 256. Adapted and Graded by HARRIETTE TAYLOR TREADWELL AND MARGARET FREE. Cloth. Illustrated.

WARWICK & YORK, BALTIMORE

The Outlines of Educational Psychology. An Introduction to the Science of Education. By WILLIAM HENRY PYLE, PH.D., University of Missouri. Cloth. Enlarged Edition. With Charts. Pp. 268.

JOHN WILEY & SONS, NEW YORK

Elements of Plane Trigonometry, High-School Edition. By ROBERT E. MORITZ. Cloth. Illustrated. Pp. 323. $1.00.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN[2]
Librarian, School of Education, University of Chicago

Abbott, P. The fifth International Congress of Mathematics. School W. 14:416–19. (N. '12.)

Affleck, G. B. Bibliography of physical training and hygiene, May–August, 1912. Am. Phys. Educa. R. 17:624–36. (N. '12.)

Arnold, Frank R. Bicentenary viewpoints of Rousseau. Educa. 33:135–37. (N. '12.)

Brereton, Cloudesley. The character-forming influence of vocational education. J. of Educa. (Lond.) 44:779–80. (N. '12.)

Bronk, Isabelle. Experiences of a non-native teacher of modern languages. Educa. 33:150–58. (N. '12.)

Brown, J. C. An investigation on the value of drill work in the fundamental operations of arithmetic. J. of Educa. Psychol. 3:485–92. (N. '12.)

In the investigation reported in this paper, the pupils who had been drilled did uniformly and considerably better than the others.

Carringer, M. A. The ten year old boy and his books. Educa. 33:166–69. (N. '12.)

Charles, Fred. The second Moral Education Congress. School W. 14:419–21. (N. '12.)

Clark, Herbert F. An experiment in concentration. Psychol. Clinic 6:178–79. (N. '12.)

The effect of permission to leave school when tasks were finished upon a group of boys in a special school.

(The) Cleveland meeting of the American Association for the Advancement of Science. Science 36:707–10. (22 N. '12.)

Preliminary program, directory of meetings, etc.

[1] *Abbreviations.*—Am. Phys. Educa. R., American Physical Educational Review; Cent., Century; Child Wel. M., Child Welfare Magazine; Educa., Education; El. School T., Elementary School Teacher; English J., English Journal; J. of Educa. (Bost.), Journal of Education (Boston); J. of Educa. (Lond.), Journal of Education (London); J. of Educa. Psychol., Journal of Educational Psychology; Lit. D., Literary Digest; Man. Train. M., Manual Training Magazine; Outl., Outlook; Pop. El. M., Popular Electricity Magazine; Pop. Sci. Mo., Popular Science Monthly; Psychol. Clinic., Psychological Clinic; School R., School Review; School W., School World; Sci. Am. Sup., Scientific American Supplement; Tech. World M., Technical World Magazine.

[2] Annotations by Dr. Frank N. Freeman.

Colby, Lester B. Great new school for Texas. Tech. World M. 18:388–91. (D. '12.)

Crichton-Browne, James. Child study and school hygiene. Child (London) 3:105–16. (N. '12.)

Crossley, M. L. The function of a college education. Educa. 33:129–34. (N. '12.)

Drinker, Cecil K. Undergraduate research work in medical schools. Science 36:729–38. (29 N. '12.)

An investigation of the opportunities for undergraduate research in selected American medical schools.

Du Breuil, Alice Jouveau. Written composition in the high school. English J. 1:537–46. (N. '12.)

Dumville, Benjamin. The methods of teaching reading in the early stages. School W. 14:408–13. (N. '13.)

A comparison of the method of phonetic analysis with the "Look and Say" method to the advantage of the latter.

England's athletic schoolboy. Lit. D. 45:905. (16 N. '12.)

Foxley, Barbara. How children learn to read. School W. 14:413–16. (N. '12.)

A comparison of the phonetic and "common-sense" methods to the advantage of the latter.

Gallienne, Richard le. Children in fiction. Harper 126:73–78. (D. '12.)

Gayler, G. W. Are the elementary schools getting a square deal? Psychol. Clinic 6:174–77. (N. '12.)

A comparison of the salaries and per capita expenses in the elementary and high school.

Hall, John W. Plans for grade lessons in geography. El. School T. 13:171–79. (D. '12).

Hays, Willet M. A national university. Science 36:723–29. (29 N. '12.)

A criticism of certain features of the scheme presented by Presidents Van Hise and James, together with certain positive suggestions.

Hein, Leon F. A. The cost of materials for manual training in the elementary grades. Man. Train. M. 14:129–37. (D. '12.)

Hill, David Spence. The need of practical co-operation of educational and of medical departments in modern universities. Science 36:647–59. (15 N. '12.)

Howe, Charles B. The future of the manual training high school in vocational education. Man. Train. M. 14:105–14. (D. '12.)

(An) industrial university. Pop. El. M. 5:859–60. (D. '12.)

Johnson, Alvin S. The child and social reform. Dial 53:380–83. (16 N. '12.)

King, Irving, and Johnson, Harry. The writing abilities of the elementary and grammar school pupils of a city school system measured by the Ayres scale. J. of Educa. Psychol. 3:514–20. (N. '12.)

The results of the application of the Ayres test to the eight grades and a table showing the variability among eight judges.

Kirkpatrick, E. A. Financial training of children. Child Wel. M. 7:73–78. (N. '12.)

Koeppel, George. Observations concerning the organization of schools and certain phases of educational work in Germany. El. School T. 13:189–97. (D. '12.)

Leslie, R. Murray. Child welfare and industrial insurance. Child (London) 3:117–24. (N. '12.)

McCracken, Elizabeth. Children in bookland. Outl. 102:686–92. (23 N. '12.)

MacDougall, Robert. The child's speech. II. J. of Educa. Psychol. 3:507–13. (N. '12.)

The influence of the mother's speech as a model for the child.

Moorhead. F. G. College for egg buyers. Tech. World M. 18:396–98. (D. '12.)

Noyes, Ernest C. Progress in standardizing the measurement of composition. English J. 1:532–36. (N. '12.)

A popular description of the Thorndike-Hillegas method, with approval.

O'Leary, Raphael D. Pity the poor teacher. English J. 1:552–56. (N. '12.)

Paul, Harry G. The teaching of lyric poetry. II. English J. 1:521–31. (N. '12.)

Porter, Elizabeth Crane. A pageant of progress. Outl. 102:653–59. (23 N. '12.)

Prince, John T. Moral training in public schools. Educa. 33:138–43. (N. '12.)

Raycroft, J. E. The athletic research society. Am. Phys. Educa. R. 17:585–98. (N. '12.)

Rickert, Edith. Exclusiveness among college women. Cent. 85:227–35. (D. '12.)

Riis, Jacob A. The New York newsboy. Cent. 85:247–55. (D. '12.)

Robinson, Edward Van Dyke. The reorganization of the grades and the high school. School R. 20:665–88. (D. '12.)

Rogers, A. K. The function of the American college. Pop. Sci. Mo. 81:574–81. (D. '12.)

Ryle, E. A three years' Latin course. School W. 14:401–4. (N. '12.)

Sargent, D. A. Defects in the school curriculum in physical training as shown by the disabilities of college students. Am. Phys. Educa. R. 17:602–7. (N. '12.)

Schools for tractioneers. Sci. Am. Sup. 74:348. (30 N. '12.)

Schurman, J. G. Faculty participation in university government. Science 36:703–7. (22 N. '12.)

A formal proposal to extend to professors representation upon the governing bodies of the university.

Scott, J. F. Apprenticeship under the English gild system. El. School T. 13:180–87. (D. '12.)

Scovel, Mary C. The theater: a second grade problem. Man. Train. M. 14:115–28. (D. '12.)

Sisson, Edward O. College students' comments on their own high-school training. School R. 20:649–64. (D. '12.)

Smith, F. The psychology of adult reading. School W. 14:404–8. (N. '12.)

A brief account of the results of the experiments on reading—no new material.

Smith, Harlan I. The educational work of a great museum. Science 36: 659–64. (15 N. '12.)

A description of the ways in which a museum may extend the scope of its influences.

Smith, Simeon Conant. Poetic triteness. English J. 1:547–51. (N. '12.)

Snow, Mary S. Essentials in education. J. of Educa. (Bost.) 76:507–8. (14 N. '12.)

Squire, Carrie Ransom. Graded mental tests. III. J. of Educa. Psychol. 3:493–506. (N. '12.)

A continuation of the report on graded tests to include the higher mental processes. Also a classification of abilities in all the tests according to age.

Stowe, Lyman Beecher. Training city boys for country life. Outl. 102: 537–41. (9 N. '12.)

Stowe, Lyman Beecher. Training city boys for country life. II. Outl. 102:584–91. (16 N. '12.)

Thorn-Wright, Doris. Oral reading in its relation to the study of literature. English J. 1:557–61. (N. '12.)

Utsurikawa, Nenozo. The status of Japanese students in America: past and present. Educa. 33:144–49. (N. '12.)

Wallin, J. E. Aspects of infant and child orthogenesis. Psychol. Clinic 6:153–73. (N. '12.)

A critical consideration of the methods of eugenics and of euthenics in promoting the mental and physical welfare of the child.

Wild, Laura H. Training for social efficiency—the relation of art, industry and education. Educa. 33:159–65. (N. '12.)

Woodrow Wilson at college. Lit. D. 45:970–72. (23 N. '12.)